



JON M. HUNTSMAN, JR.  
Governor

GARY R. HERBERT  
Lieutenant Governor

# State of Utah

## DEPARTMENT OF NATURAL RESOURCES

### Division of Oil, Gas & Mining

MICHAEL R. STYLER  
Executive Director

JOHN R. BAZA  
Division Director

January 17, 2008

Mr. Mike Dalley – Environmental Affairs  
Staker & Parsons Companies  
151 West Vine Street  
Murray, Utah 84107

Subject: Response to Staker & Parson Letter of January 10, 2008, Staker & Parson Companies, Beck Street Quarry, M0350019, Salt Lake County, Utah

Dear Mr. Dalley:

Please find enclosed an extension of the NOV to February 10, 2008. The previous deadline of December 15, 2007 has been extended per your request. An initial extension was granted until January 10, 2008, at which time the Division received a letter from Staker & Parson Companies focusing on the issues relating the to highwall and the test results of the fines sample submitted to Utah State University Analytical Labs.

As a review of the NOV content, you were to provide draft NOI amendment documentation by January 10, 2008. As of January 16, this draft has not yet been received. In order to abate the NOV, the NOI must be amended and receive Division approval by February 10, 2008. In conjunction with that effort, the lab test results of the material collected by Staker & Parsons Companies are not thought to be representative of the fines, which we requested be tested. As a result, the Division plans to make a site visit on or before January 22 to collect another sample for independent testing. Mr. Paul Baker should have been in contact with you to make the necessary arrangements to collect the sample.

The Division has also requested a copy of the *2005 IGES Final Report Geologic/Geotechnical Investigation Beck Street Quarry Phase I Mining Plan, North Salt Lake, Utah* in order to review the IGES stability analyses, related data, and slope design assumptions. The Staker & Parson Companies letter of January 10 claims the "highwall is constructed as designed," however, visual inspection of the area on October 4, 2007 revealed no catch benches, irregular bench faces, and other factors that cause concern and trigger questions regarding the implementation of the IGES highwall design recommendations. The claim

that the highwall is "stable and safe" cannot be substantiated without displacement monitoring data. We will be surprised if IGES, Inc. did not recommend slope displacement monitoring to confirm slope design assumptions and ensure operator safety.

The Division looks forward to receipt of a copy of the *2005 IGES Final Report Geologic/Geotechnical Investigation Beck Street Quarry Phase I Mining Plan, North Salt Lake, Utah*. Please forward a copy to my attention. Given your assurances that "IGES, Inc. verified through detailed slope stability modeling that" the highwall design "would be environmentally stable and safe," we anticipate that their work did not assess rockfall and/or erosion hazards which are the principal hazards addressed in the December 12, 2007 NOV.

In response to the Staker & Parson Companies letter of January 10, 2008 the following comments are outlined below:

Catch benches are so named because they are intended to "catch" material which falls from overlying bench faces. Whenever rockfalls report to the toe of a slope, it can be assumed that insufficient catch bench width has been provided. Although sufficient catch bench width (to catch rockfalls) may be shown in designs, the effective catch bench width may be much less than designed due to backbreak, partial flooding of benches with rill, and poor mining practice. Trim blasting, crest outlining, and other excavation techniques have been developed to maintain the integrity of the bench faces and retain catch bench width. In the interest of excavating an environmentally safe and stable highwall, consideration should be given to implementing one or more of these techniques. In addition, stability analyses should consider the stability of individual bench faces with respect to natural joint orientation, length & spacing data, and not just overall slope stability.

The Division agrees that runoff and associated sediment load from the highwall and the overlying natural slope is captured on-site at the base of the highwall. Contrary to the opinion of Staker & Parsons Companies, however, it is the opinion of the Division that running water, sediment and rockfalls can contribute to an unstable area. A berm or other barrier should be provided near the toe of the highwall to prevent unauthorized entry into this area and reduce the risk from rockfall. Sufficient offset should be

provided between the barrier and the highwall toe to allow for expected rockfall runout. Rockfall runout analyses should be conducted for this and all interim and final pit slopes. The Division is pleased to hear that Staker & Parsons Companies remains "committed to maintaining public safety when operations cease and the area is reclaimed."

Presumably, the statement that "the bedrock slope would not be easily eroded, thus excessive sediment production would not occur" is substantiated in the 2005 Final IGES Report. It is the opinion of the Division that this cannot be assumed simply because the highwall is excavated in "bedrock." The erodability of a bedrock slope is a function of the fracture spacing, fracture infill, and fracture orientation of the rock mass. Weathering and blast disturbance further exacerbate the erosion potential of a rock mass. The irregular bench faces and the abundance of loose rill which was observed on the remnant catch benches during our inspection of October 4, 2007 suggest that this rock mass is erodible, fractured, or blast disturbed. It is also possible that sediment is washing-in from the overlying natural slope. Whatever the cause, the condition of this interim pit slope is considered hazardous and it does not satisfy the Division's requirements for an "environmentally safe and stable" highwall. In the opinion of the Division, Staker & Parson Companies should modify their slope design and/or excavation practices to ensure an "environmentally safe and stable" highwall will be provided upon mine closure. In subsequent cuts, additional catch bench width could be provided immediately below the natural overlying slope to contain failures and/or rockfalls as well as control sediment and runoff from the adjacent property "not owned or controlled by Staker & Parson Companies."

The Division agrees with your planned visual monitoring scheme because it recognizes that instrumentation cannot be safely installed on the existing 58-deg highwall slope because safe access cannot be ensured. However, in addition to the planned visual monitoring, the Division recommends that displacement monitoring be initiated in the active mining cut and all subsequent cuts to ensure that displacements too small to be detected by monthly visual inspections are recorded. Small displacements and accelerations are frequently precursors of large scale future events. Displacement monitoring of interim and final highwall slopes is Best (open pit) Mining Practice and the only known way of verifying slope design assumptions and demonstrating highwall safety and stability. Today's active mining cut will form tomorrow's inactive highwall, therefore displacement monitoring should be initiated in active mining

Page 4  
Mike Dalley  
M0350019  
January 17, 2008

cuts while safe access can be provided.

It is important to review the content of this letter and take these responses into consideration while preparing the NOI draft submittal. The Division agrees that if the southern highwall will be accessed at a later date, then reclamation is not required at this time. It was unclear to the Division if that area was considered operational.

Please direct questions and inquiry to Ms. Beth Ericksen if needed. She can be reached at 801-538-5318.

Sincerely,

A handwritten signature in black ink, appearing to read "Daron Haddock", written over a horizontal line.

Daron Haddock  
Permit Supervisor

DH:BE;pb  
Enc: extension of NOV until Feb. 12, 2008  
cc: Linda Matthews, JBR 8160 South Highland Dr Sandy Utah 84093  
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Page 1 of 1

**MODIFICATION of**  
**Notice of Violation / Cessation Order**

To the following Permittee or Operator:

Name: Staker & Parsons Companies attn: Mr. Mike Dalley, contact

Mailing Address: 151 W VINE ST Murray Utah 84107

Mine Name: Beck Street Permit Number: M/035/019

Utah Mined Land Reclamation Act, Section 40-8-1 et. seq., *Utah Code Annotated (1953)*:

Notice of Violation No N-07-058-02 dated December 14, 2007

Part 1 of 3 is modified as follows: Extension granted until February 12, 2008 for the Division approval for the permit modifications that will be incorporated into the NOI.

Reason for modification is: The NOV states that 30-days are allowed once the draft amendment is received. The Division received a letter on January 10<sup>th</sup> outlining the intention of the action items associated with the NOV. Per the letter from JBR Consulting, the draft amendment will be submitted by January 30, 2008

Part 3 of 3 is modified as follows: Extension granted until February 12, 2008 for independent fines sample collection and results. Incorporation of the data and results into the plan with Division approval must occur by February 12, 2008.

Reason for modification is: Sample outcome revealed question regarding the representative sample that was tested, an independent test of the fines will occur.

Date of service/ mailing: \_\_\_\_\_ Time of service/ mailing \_\_\_\_\_ ☒ a.m. ☐ p.m.

Date of inspection: \_\_\_\_\_

Permittee or Operator Representative

Title

Signature

Beth Ericksen

Division of Oil, Gas & Mining Representative

mining engineer

Title

Signature

L.MATTHEWS@JBRENV.COM

KKNCOOP@JBRENV.COM

JOHN PARSON

Staker & Parson  
2350 S 1900 W  
Ogden, UT